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ABSTRACT

This study explored the impact of preschools with a language and literacy focus on the development of early literacy. The aims of the study were to: (1) compare the emergent literacy development of children who attended a preschool with a language and literacy focus with that of a comparable group of children who did not attend such a preschool; (2) examine changes in preschoolers' conceptual understanding of print; and (3) examine changes in preschoolers' prereading skills. Subjects were 32 low-income Hawaiian children attending two preschools with a language and literacy focus and 16 children from a different preschool. A set of early literacy tasks, including tasks reflecting concepts about print and tasks measuring prereading skills, were administered. Results showed that participants performed significantly better on all tasks involving traditional prereading skills than did children from the preschool that was not oriented towards literacy. Findings on the development of concepts about print, however, showed that the preschool experience had a measurable effect only on the task gauging children's understanding of the functions of print. The data suggest that exposure to preschool accelerates the development of prereading skills and sophisticated aspects of emergent literacy. However, beginning print awareness derives from ordinary daily experiences. (SH)

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IMPACT OF PRESCHOOL ON THE DEVELOPMENT OF EARLY LITERACY

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Abstract

Recent research has indicated that literacy learning occurs before children enter school. In this study we explored the impact of preschool with a language and literacy focus on the development of early literacy. Hawaiian preschoolers showed significant improvement over a five month interval on a variety of tasks measuring their concepts about print and more traditional pre-reading skills. Participants performed significantly better than comparable children without similar preschool experience on all traditional pre-reading skills; findings on the development of concepts about print were more equivocal. Results were in the expected direction but only on the task tapping children's understanding of the functions of print did the preschool experience have a measurable effect. The data suggest that exposure to preschool accelerates the development of pre-reading skills and sophisticated aspects of emergent literacy, but that beginning print awareness derives from ordinary daily experiences.

A body of research is accumulating that suggests that young children have considerable knowledge about print and other aspects of literacy before they enter school (e.g., Hiebert, 1981; Teale & Sulzby, 1986). These findings have implications for understanding the development of young children's knowledge base generally and for educational practices. Of particular interest is the nature of the literacy knowledge young children acquire through the daily experiences of their lives, and the impact of schooling on that knowledge.

The specific aims of this study were to:

1) compare the emergent literacy development of children who attended a preschool with a language and literacy focus with a comparable group of children without that experience.

2) to examine changes in preschoolers' conceptual understanding of print.

3) to examine changes in preschoolers' pre-reading skills.

Subjects/Method

The experimental subjects were 32 low-income Hawaiian children attending two Kamehameha Schools preschools with a language and literacy focus.

Literacy tasks were administered three months after the start of preschool (mean age = 54.3 months) and again five months later (mean age = 59 months) near the end of the school year.

Following a post-test-only control design, the same set of tasks were administered to 16 children (mean age = 56.6 months) from the same socioeconomic and ethnic backgrounds as the experimental group. These children entered a new Kamehameha preschool in Spring and were tested after one month's participation.

Repeated measures analysis of variance was used to analyze the data from the two testing sessions for the experimental group. To control for the two month age difference between the experimental and control groups, analysis of covariance with age as a covariate was applied to the data for the relevant comparisons.

Tasks

Based on the early literacy model formulated by Lomax and McGee (1987) and various measurement approaches and tasks (e.g., Head Start Measures Battery, 1989; Hiebert 1981; Mason & Stewart, 1989) a set of early literacy tasks were selected that measure knowledge and skills related to subsequent literacy and that were compatible with the language and literacy objectives of the preschool programs.

The early literacy assessment battery included a group of tasks reflecting contemporary notions about emergent literacy (CONCEPTS ABOUT PRINT) and another set of tasks measuring more traditional reading readiness skills (PRE-READING SKILLS). The specific tasks were:

CONCEPTS ABOUT PRINT

Recognize Words in Context

This task measures the pre-reading child's ability to "read" words by using the visual and/or verbal support provided by the context. Words likely to be encountered in the environment were included in line drawings (e.g., stop sign) or occurred naturally in actual photographs of familiar objects (e.g., school bus). Credit was given for reasonable responses reflecting the child's knowledge of the world, whether or not the response was literally correct.

Identify Print Items, Understand the Functions of Print Items, and Understand the Functions of Reading

These tasks measure the young child's understanding of the role of print in everyday life. Children were asked to:

a) identify common print materials, (e.g., newspaper, telephone book, calendar),

b) indicate the specific reading functions of these common print materials,

c) explain why people read and the kinds of things people read.

PRE-READING SKILLS

The focus of this set of tasks is on specific pre-reading skills, rather than the child's conceptual understanding of print.

Letter Orientation

Perceptual sensitivity to letter orientation was measured by asking the child to select the letter from among four alternatives in different orientations that matched the correct orientation of each target letter.

Alphabet Identification

Knowledge of the correspondence between letter names and graphic representations of letters was measured by the child's ability to identify 10 upper- and 10 lower-case letters.

Sound Discrimination

Sensitivity to initial and ending phonemes was assessed by a series of items in which the child was asked to point to the two pictures out of three that started with the same sound and similarly, to select the picture pairs that ended with the same sound (i.e., rhyming words).

Results and Discussion

Figure 1 presents data on the CONCEPTS ABOUT PRINT section of the early literacy battery. Mean scores of the children in the language and literacy focused preschool after three months attendance (time 1) are compared with their scores five months later (time 2) and with the scores of the control group. The major findings were:

1. Children exposed to a language and literacy focused preschool program generally showed significant improvement on the tasks measuring CONCEPTS ABOUT PRINT. Comparisons with the control group were in the expected direction but were not necessarily statistically significant, suggesting that some of the observed changes were primarily developmental. Specifically:

   a. Children improved significantly over a five-month interval ($p < .001$) in their ability to use contextual cues to "read" words (RECOGNIZE WORDS IN CONTEXT).

Children's initial errors primarily consisted of describing an action or the actor (e.g., driving or bus driver) rather than the object that was labelled in the drawing or photograph (e.g., school bus). Some understanding of the development of children's ability to "read" words in meaningful contexts derives from looking at changes in their responses to the question, "what does this say?", when presented with a photograph of a Pizza Hut. Initially, of the 22 children who were credited for giving a reasonable and appropriate response, 13 answered with one of four other fast food chains and only nine children gave the literally correct response of Pizza Hut. Five months later, however, only three children identified another fast food restaurant, whereas 24 children "read" the words accurately. Early in the year children apparently responded to visual cues from the Pizza Hut photograph that fit their schema for fast food restaurants and they selected one such restaurant with which they

were familiar. Later in the year, children's developing print awareness apparently helped focus them on the graphic elements of the sign, thus permitting an exact response.

By the end of the school year children in both the experimental and control groups were quite proficient in labeling words embedded in supportive contexts, earning mean scores of 7.50 and 6.56, respectively, out of a maximum possible score of nine. Differences between the groups were not significant.

b. Children improved significantly ($p < .03$) in their ability to identify common print materials (IDENTIFY PRINT ITEMS) and to explain specifically why people read these different types of print materials (UNDERSTAND FUNCTIONS OF PRINT ITEMS) ($p < .02$).

Among the sub-tests measuring children's understanding of print, the impact of the preschool experience was most reflected in differences in the adequacy of the reasons children provided for reading various types of print materials. Children's responses for the five items on this task were rated on a three-point scale: 0 = failure to respond or clearly irrelevant or inappropriate responses; 1 = responses that show some understanding of the specific purpose for reading the particular item; 2 = responses that provide a clear conceptual understanding of a specific or general reason for reading the particular item. The mean score for children who had attended the language and literacy focused program for the school year was 5.31, in contrast to 2.94 for the control group ($p < .07$).

For the preschool participants, a consistent response pattern across all items emerged between the two testing sessions. The number of children receiving 0 scores was virtually unchanged over the five-month interval, however, there was a doubling of children providing level 2 explanations for the print functions of the different items. The percentage of preschool participants earning scores of 2 initially ranged between 22% (newspaper,

calendar, and menu) and 30% (map). The range of level 2 responses had shifted by the end of the year to between 38% (calendar) and 63% (map).

For a sub-set of children who entered preschool with minimal pre-literacy development, their experience in school did not have a measurable affect on their understanding of the functions of print. However, those children whose pre-literacy skills were in evidence early in the school year clearly benefitted from their preschool experience, developing a more sophisticated understanding of the role of print in everyday life. In contrast, very few control children gave responses that indicated that they had knowledge of the functions of the various print items. For example, 14 of the 16 children received 0's for the calendar item and across all items less than one-third of the children earned a score of 2 for any item.

Table 1 presents a sample of level 2 responses provided by the preschool participants at the second testing session. Their explanations for the various functions of print support the idea that these children are developing a keen understanding of the role that print plays in daily life. Children mentioned a wide range of specific kinds of information that newspapers provide as well as more general statements. Their understanding of the use of phone books evolved from the general idea that phone books contain phone numbers (e.g., "for call up somebody if they can go camping") to the more pertinent notion that phone books are used to look up numbers that you don't know. Over the course of the year, children moved from a focus on how calendars are typically used in the preschool setting (e.g., "so they know their numbers") to a clearer understanding of their more general use as a marker of time.

c. Children had great difficulty initially, and at the end of the year, explaining more generally why people read (UNDERSTAND FUNCTIONS OF READING).

For both experimental and control children the responses that were given tended to reflect the idea that reading is a pleasurable activity (e.g., "they like read".) However, preschool participants showed growth in identifying a range of reading materials. At the beginning of the year 22% of the children were unable to name anything that people read, and 56% could respond with just one item, books. By the end of the year, 35% as compared with 19% initially, added items like magazines, papers, newspapers, and mail. In contrast, only one child in the control group named anything other than books.

Another indication of the developing literacy awareness and the impact of the preschool program emerges when examining responses and follow-up explanations to the question, "Can you read with your eyes closed?" Not one child in the control group gave a response that reflected the understanding that reading necessitates seeing words. Of the 16 children, 9 indicated it was possible to read with your eyes closed and although the rest said, " No," they focused on their lack of reading skills as the relevant explanation (e.g., "No, I no can read nothing"; "No, my Dad didn't learn me how"). In contrast, half the children in the preschool classes by the end of the year (compared to 20% at the first testing) gave explanations demonstrating their understanding that reading requires the ability to see the words (e.g., "you don't know what the words say"; "you can't see the words").

Figure 2 presents data for the PRE-READING SKILLS section of the early literacy assessment battery. It compares the preschoolers' performance at the two testing sessions with the control group.

2. Children exposed to a language and literacy focused preschool program showed significant improvement on all tasks measuring PRE-READING SKILLS. Comparisons with the control group indicate that the changes observed in the pre-reading skills of the preschoolers over a five-month period can be attributed to the impact of their preschool experience. Preschool participants performed significantly better on all pre-reading skills than the comparable children without that experience. Specifically:

a. There was a significant increase in scores on LETTER ORIENTATION ($p < .02$) and a significant difference between the experimental and control groups ($p < .001$).

Near the end of the school year, most preschool participants could select the letters that matched the orientation of the four target letters ($X = 3.56$) in contrast to the control groups ($X = 2.13$).

b. Children also improved significantly in their ability to hear the similarities between words in initial and ending sounds (BEGINNING & ENDING SOUNDS, $p < .01$). Although this task continued to be very difficult for the preschoolers, their performance was significantly better than that of the control group ($p < .001$).

The respective means were 3.56 and .63 out of a possible maximum score of 12.

c. There was a dramatic increase in the preschool participants' knowledge of upper- and lower-case letters (ALPHABET IDENTIFICATION, $p < .000$) and a significant difference between them and the control group ($p < .000$).

For the ten upper- and ten lower-case letters presented, the preschool participants identified an average of 7.72 and 6.28 letters, respectively. The comparable figures for the control group were 1.81 and .56. The preschoolers' developing knowledge of the alphabet was also reflected in changes in their ability to print their names. Name printing was scored on a three-point scale: 0 = no attempt or scribbles; 1 = some correct letters; and 2 = legible, essentially correct spelling of the child's first name. At the end of the school year,

75% of the preschoolers were able to correctly print their first names and only 16% of them could not produce any correct letters; comparable figures for the first testing session were 41% and 50%. In contrast, only 19% of children without the same preschool experience could correctly print their names and 75% of them could not form any of the letters in their first names.

Conclusions

1. Children enrolled in a preschool program with a language and literacy focus demonstrated significant development over a five-month period on a variety of tasks measuring their emerging concepts about print and their pre-reading skills.

2. Comparisons with children of similar socio-economic and ethnic backgrounds, but without comparable preschool experience revealed the impact of preschool participation on a variety of pre-reading skills. Preschool participants performed significantly better on perceptual and auditory tasks that have been linked to subsequent reading proficiency, and in letter recognition and letter writing.

3. Findings on the development of concepts about print were more equivocal. Although results were all in the expected direction, differences between the experimental and control groups were not necessarily significant. The impact of the program was most apparent on the more conceptual aspects of children's developing print awareness. Children in the preschool program had developed a much better understanding of the varied functions of different types of print materials and had a better grasp of the reading process.

4. Overall, the data suggest that exposure to preschool with a language and literacy focus accelerates the development of pre-reading skills and the more sophisticated aspects of emergent literacy but that beginning print awareness derives primarily from ordinary daily experiences.

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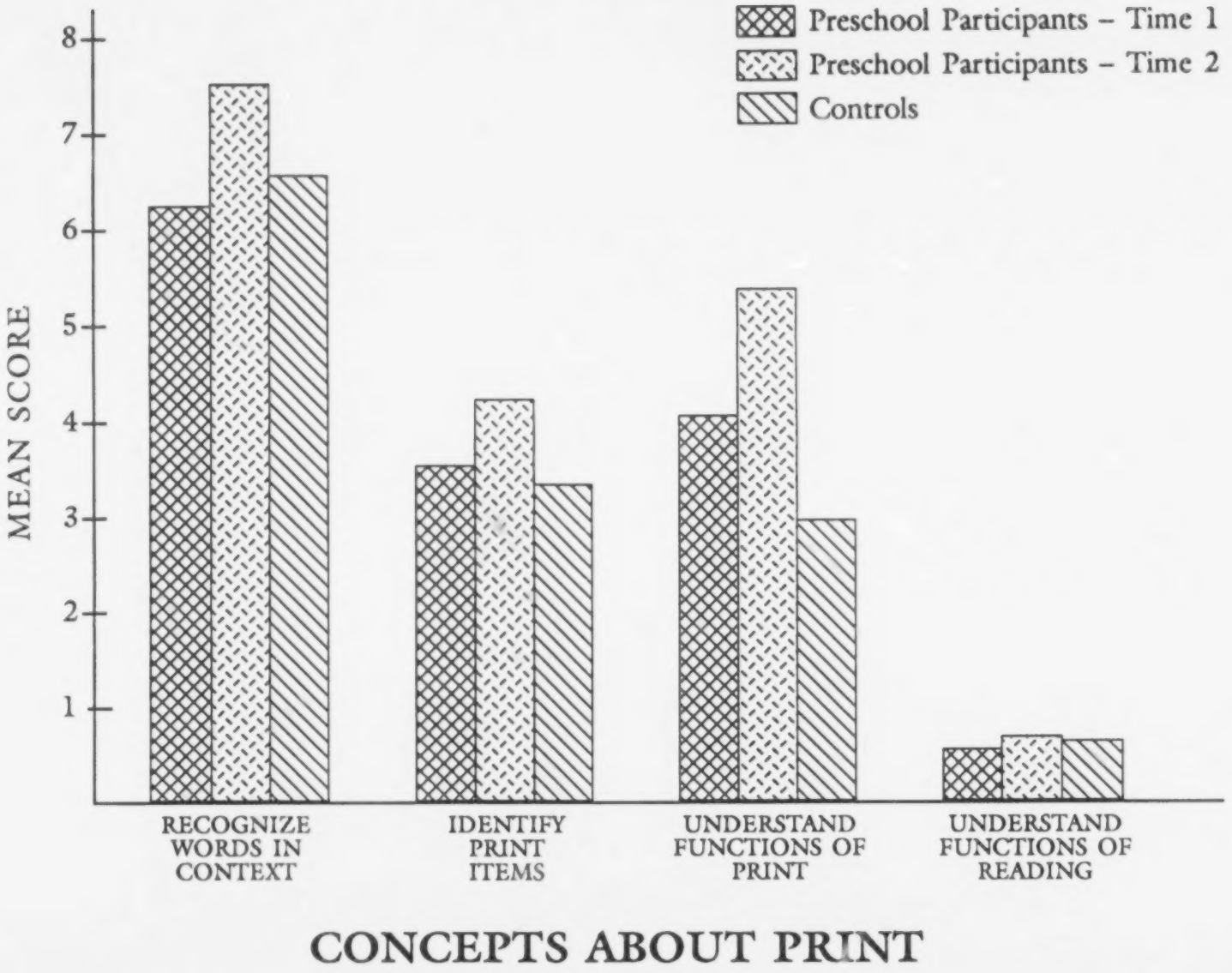

Figure 1. Performance of preschool participants on tasks measuring Concepts About Print administered five months apart and comparisons with a control group.

TABLE 1

Responses Reflecting Preschool Participants' Understanding of the Functions of Print

NEWSPAPER

To buy something
Want to see who is getting hurt and fire and parades
So they know if have accident, or if somebody died in the park or water
To learn about people
Want to know what happened

TELEPHONE

To call somebody, sometimes they forget so they have to look in the phone book for the number
They see where they can call the school when you're sick
Because they can call somebody up, because they did not know which number

CALENDAR

To see what day it is
So they know what date it is

MENU

To see what they want to order
So they know what they want to eat from the menu
They see what they like eat

MAP

So they can know where our house stays
To look what place they're going
If you don't know where school stays, buy for show where school stays
If they get lost, to find their home

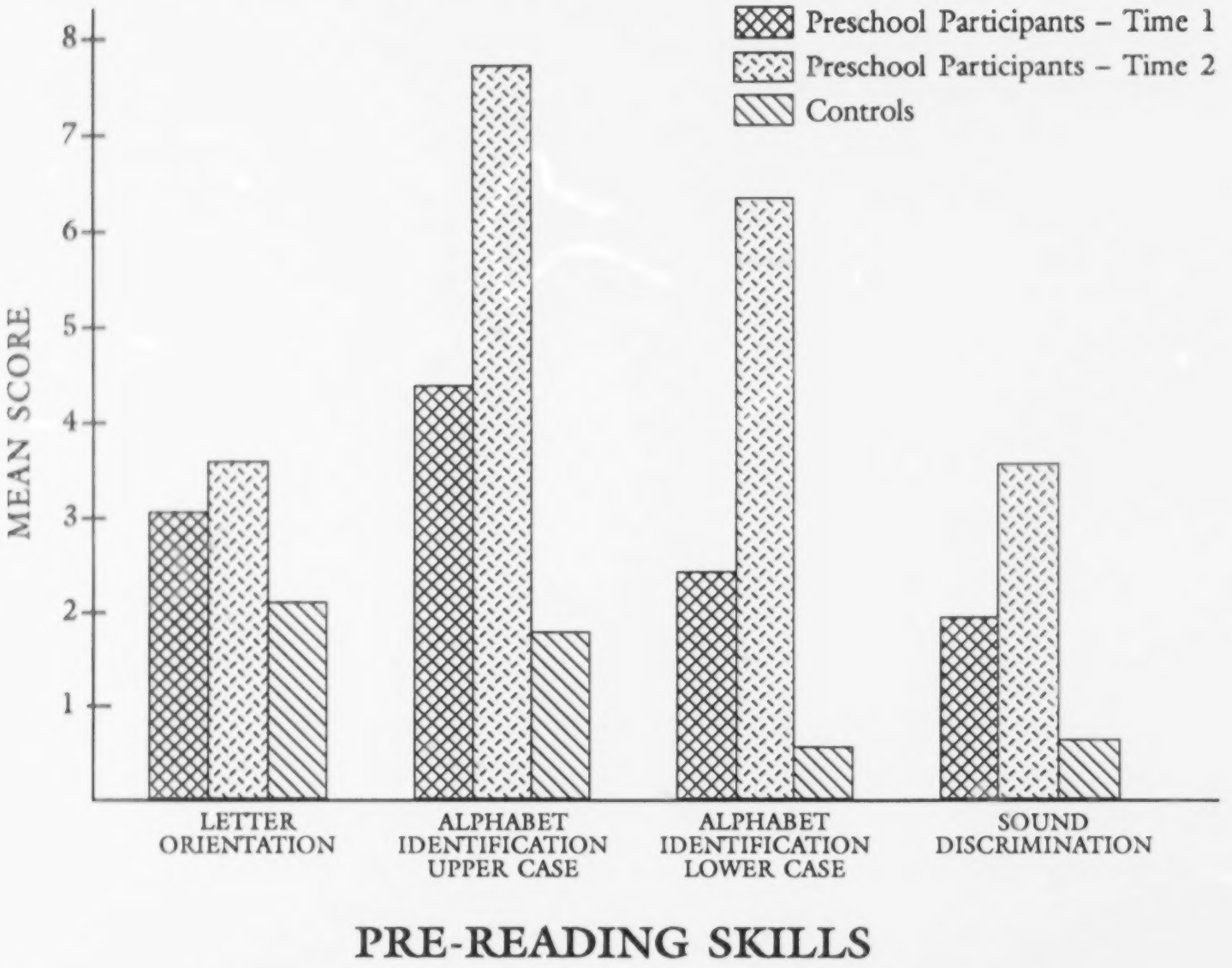

Figure 2. Performance of preschool participants on tasks measuring Pre-Reading Skills administered five months apart and comparisons with a control group.